

WHAT WE CLAIM IS:

1 1. An adsorbent for removing low and/or very
2 low density lipoprotein from body fluid in extracorporeal
3 circulation treatment, which comprises a water-insoluble
4 porous hard gel with exclusion limit of 10^6 to 10^9
5 daltons on which a sulfated compound is immobilized by a
6 covalent linkage.

sub A'

1 2. The adsorbent of Claim 1, wherein said
2 water-insoluble porous hard gel is a water-insoluble
3 porous polymer hard gel.

1 3. The adsorbent of Claim 2, wherein said
2 water-insoluble porous polymer hard gel is a porous
3 cellulose gel.

1 4. The adsorbent of Claim 1, wherein said
2 water-insoluble porous hard gel is a porous inorganic
3 hard gel.

1 5. The adsorbent of Claim 4, wherein said
2 water-insoluble inorganic hard gel is a member selected
3 from the group consisting of porous glass, porous silica
4 gel and porous alumina.

1 6. The adsorbent of Claim 1, wherein said
2 sulfated compound is a compound obtained by sulfation of
3 a hydroxy-containing compound.

a 1 6 A. The adsorbent of Claim 6, wherein the
2 sulfated compound is a sulfated carbohydrate.

1 7 B. The adsorbent of Claim 6, wherein the
2 sulfated carbohydrate is a sulfated saccharide.

1 8 C. The adsorbent of Claim 6, wherein the
2 sulfated saccharide is a sulfated polysaccharide.

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10. The adsorbent of Claim 9, wherein the
sulfated polysaccharide is a member selected from the
group consisting of heparin, dextran sulfate, chondroitin
sulfate and salts thereof.

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11. The adsorbent of Claim 10, wherein the
dextran sulfate, a salt thereof or a mixture of the
dextran sulfate and the salt has an intrinsic viscosity
of not more than 0.12 dl/g and a sulfur content of not
less than 15 % by weight.

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12. The adsorbent of Claim 11, wherein the
sulfated compound is a sulfated polyhydric alcohol.

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13. The adsorbent of Claim 1, wherein the
exclusion limit is 10^6 to 10^8 daltons.

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14. The adsorbent of Claim 1, wherein said
sulfated compound is immobilized in an amount of 0.02 to
100 mg/ml of bed volume.

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15. The adsorbent of Claim 14, wherein the
sulfated compound is immobilized in an amount of not less
than 0.2 mg/ml of bed volume.

claim 15
16. A process of preparing an adsorbent for
removing low and/or very low density lipoprotein from
body fluid in extracorporeal circulation treatment
comprising a water-insoluble porous hard gel with
exclusion limit of 10^6 to 10^9 daltons on which a sulfated
compound is immobilized, wherein said water-insoluble
porous hard gel is reacted with epichlorhydrin or a
polyoxyrane compound to introduce epoxy groups on to the
gel, and then the resulting epoxy-activated gel is
reacted with the sulfated compound.

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17. The process of Claim 16, wherein said
water-insoluble hard gel is a water-insoluble porous

3 polymer hard gel.

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18. The process of Claim ¹⁶~~17~~, wherein said
2 water-insoluble porous polymer hard gel is a porous
3 cellulose gel.

1 ¹⁸
~~19~~. The process of Claim ¹⁵~~16~~, wherein said
2 sulfated compound is dextran sulfate, a salt thereof or a
3 mixture of the dextran sulfate and the salt; said dextran
4 sulfate, the salt thereof or the mixture of the dextran
5 sulfate and the salt being reacted with the epoxy-
6 activated gel in a concentration of not less than 3 % by
7 weight based on the weight of the whole reaction system
8 excluding the dry weight of the porous hard gel.

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~~20~~. The process of Claim ¹⁸~~19~~, wherein the porous
2 hard gel is a porous cellulose gel.